



*ICPP 2023, LYON,  
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**Workshop**  
**Pectobacteriaceae:**  
**soft rot pathogenesis and symbiosis**

*19-20 August 2023*

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- **Scientific and organizing committee:**

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Research

**Session 1.** Ecology and detection.

**Session 2.** Molecular interactions with plant and invertebrates.

**ROUND TABLES:**

1. OPTIONS FOR MANAGEMENT OF SOFT ROT DISEASES.
2. TAXONOMY, WHEN SHOULD WE STOP?

# Session 1. Ecology and detection

The *Pectobacteriaceae* family comprises plant pathogens able to cause plant maceration due to the production of pectinases and other enzymes disrupting the plant cell wall.

To better understand their natural diversity, a survey of pectinolytic bacteria was performed in soil, water, infected and non-infected plants.

To better characterized *Pectobacteriaceae* natural diversity, different phenotyping and genomic methods were utilize.

Based on phenotypic, genomic and phylogenetic characteristics, different groups propose the creation of a new genus within *Pectobacteriaceae* family and new species within *Dickeya* and *Pectobacterium* genera.

# Session 1.1 Ecology and detection

**Nicole HUGOUVIEUX-COTTE-PATTAT, France**

CHARACTERIZATION OF A NEW GENUS OF THE *PECTOBACTERIACEAE* FAMILY AND RECTIFICATION OF THE OUTLINE OF THIS FAMILY

New genus: *Musicola paradisiaca*, *Musicola kenii*

**HAO J. , MAIN, USA,** DYNAMIC AND DIVERSIFIED BACTERIAL COMPLEX CAUSING POTATO BLACKLEG AND SOFT ROT IN THE NORTHEASTERN UNITED STATES

*Dickeya dianthicola* was the predominant species, *Pectobacterium parmentieri* several other bacteria were found including *P. polaris*, *D. dadantii*, *P. atroseptica*, *D. zea*, *P. brasiliense*, and *P. versatile*.

**Hajar BEN MOUSSA, France,** PECULIAR EVOLUTION OF TWO *PECTOBACTERIUM* SPECIES, *P. AQUATICUM* AND *P. QUASIAQUATICUM*, SUGGESTING AN ADAPTATION TO A NEW ENVIRONMENTAL NICHE.

*P. aquaticum*, *P. quasiquaticum*

**Ewa Łojkowska, Poland,** GENOTYPIC AND PHENOTYPIC ANALYSES ON *PECTOBACTERIUM ATROSEPTICUM* ASSOCIATED WITH POTATO SOFT ROT AND BLACKLEG DISEASES IN POLAND

*P. atrosepticum*

## Session 1.2. Ecology and detection

- **Jan VAN DER WOLF, The Netherlands**, DIVERSITY AND BIOLOGICAL FEATURES OF PECTOBACTERIUM BRASILIENSE, CAUSATIVE AGENT OF POTATO BLACKLEG;  
Jan VAN DER WOLF  
*P. brasiliense, P. parmentieri*
- **Jeremy CIGNA, France**, AGGRESSIVENESS AND BEHAVIOR OF DIFFERENT PECTOBACTERIUM AND DICKEYA SPECIES INVOLVED IN POTATO BLACKLEG DISEASE;  
*P. atrosepticum, P. brasiliense, P. parmentieri, P. versatile, P. betavaculorum and D. dianthicola, D. solani*
- **Euphrasie LÉPINAY, France**, RELATION BETWEEN TUBERS TESTING FOR SOFT ROT PECTOBACTERIACEA AND THE BLACKLEG EXPRESSION IN SUBSEQUENT FIELDS.  
*P. atrosepticum, P. parmentieri, P. brasiliense, D. dianthicola, D. solani*
- **Agata MOTYKA-POMAGRUK, Poland**, INTRASPECIES VARIATION AND MALDI-TOF MS-BASED PHYLOPROTEOMIC STUDY OF AN ECONOMICALLY IMPORTANT PLANT PATHOGEN *DICKEYA SOLANI*.  
*D. solani*

# Round Table Discussion

## 1.1. OPTIONS FOR MANAGEMENT OF SOFT ROT DISEASES

**Management of diseases** caused by soft rot *Pectobacteriaceae* (SRP) is a challenge as there are **no control agents registered and effective resistance is absent in commercial cultivars.**

Currently, **management is based on testing of plant propagation material**, on hygiene and on the use of cultivation practices that reduce cross contaminations within plants and plant material.

The discussion was concentrated **first on** the effectiveness of current measures and new developments for disease management which include the use of improved detection protocols and application of physical, chemical and biological agents for disease control.

The **second important issue** was to determine if evaluated latent infections in tuber and plant seed materials could predict the risk of blackleg in the following year.

# Round Table Discussion

- **1.2. TAXONOMY of SRP, WHEN SHOULD WE STOP?**

Over the last decade, the SRP community has made considerable efforts to clarify the taxonomy of SRP.

In eighties **3 species: *E. atroseptica*, *E. carotovora* *E. chrysanthemi*;**

**In nineties 2 genus: *Dickeya* with 6 species/subspecies and *Pectobacterium* with 5 species/subspecies**

As a result of application of genomic methods and bioinformatics currently 35 species are described:

**23 within the genus *Pectobacterium*, 12 within the genus *Dickeya* and 2 within the newly described genus *Musicola*.**

This collective effort has allowed the clarification

of the ***P. carotovorum*** complex within *Pectobacterium*  
and the ***D. zeae*** complex within *Dickeya*.



Thank you for your attention

